IN THE SPECIFICATION

Please insert the following paragraph on page 1 after the title of the invention and before the "Technical Field":

--RELATED APPLICATION

This application is a national phase of PCT/JP2004/016643 filed on November 10, 2004, which claims priority from Japanese Application No. 2003-385715 filed on November 14, 2003, the disclosures of which Applications are incorporated by reference herein. The benefit of the filing and priority dates of the International and Japanese Applications is respectfully requested.—

The following paragraphs will replace all prior versions of them in the specification of the application.

1) On page 10, line 7 - page 11, line 7, please amend as follows:

~~According to the present invention (Claim 1), there is provided a data processing apparatus for scrambling data which are under being transferred, which comprises: an ID storing section which stores an ID information relating to a sector which is a scrambling-block unit of data under being transferred, which ID information is set by a central processing unit; a sector counter section which counts the number of the sectors in the data under being transferred; an operation section which adds the ID information from the ID storing section and the sector number information from the sector counter section; and the data under being transferred being scrambled using the addition result which is outputted from the operation section. According to the present invention (Claim 2), there is provided a data processing apparatus for de-scrambling data which are under being transferred, which comprises: an ID storing section~~

which stores an ID information relating to a sector which is a scrambling block unit of data under being transferred, which ID information is set by a central processing unit; a sector counter section which counts the number of the sectors in the data under being transferred; an operation section which adds the ID information from the ID storing section and the sector number information from the sector counter section; and the scrambled data under being transferred being de-scrambled using the addition result which is outputted from the operation section.

2) On page 11, line 8-10, please amend as follows:

According to the present invention (Claim 3), there is provided a data processing apparatus as defined in claim 1 or 2, which further for scrambling data which are under being transferred or de-scrambling data which are under being transferred or de-scrambling scrambled data which are being transferred, which comprises: an ID storing section which stores an ID information relating to a sector which is a scrambling block unit of data under being transferred, which ID information is set by a central processing unit; a sector counter section which counts the number of the sectors in the data under being transferred; an operation section which adds the ID information from the ID storing section and the sector number information from the sector counter section, a scramble seed value table conversion section which converts the addition result which is inputted from the operation section into a scrambling seed value; a scramble filter of at least one byte which, making a period during which data of a predetermined length is transferred one cycle, produces a next cycle scramble seed value from the present cycle scramble seed value; a selector which selects a scramble seed value which is outputted from the scramble seed table conversion section when the data to be transferred is data at a top of a sector, and selects the scramble seed value which is outputted from the scramble filter section otherwise, to

output the selected result to the scramble filter; and the data under being transferred being scrambled or the scrambled data under being transferred being de-scrambled using the scramble seed value which is outputted from the selector.

3) On page 11, line 25 and page 12, line 1, please amend as follows:

According to the present invention (Claim 4), there is provided a data processing apparatus as defined in claim 3, wherein: the scramble filter section which includes at least two scrambling filters, selects a scrambling filter in accordance with the data length of the data to be transferred to produce a next cycle scrambling seed value from the present cycle scrambling seed value.

4) On page 12, line 7, please amend as follows:

According to the present invention (Claim 5), there is provided a data processing apparatus for scrambling data which are under being transferred, which comprises: an ID storing section which stores an ID information relating to a sector which is a scrambling block unit of data under being transferred, which ID information is set by a central processing unit; a sector counter section which counts the number of the sectors in the data under being transferred; an operation section which adds the ID information from the ID storing section and the sector number information from the sector counter section; a scramble seed value table conversion section which converts the addition result which is inputted from the operation section into a scrambling seed value; a scramble filter which, making a period during which data of a predetermined length is transferred one cycle, produces a next cycle scramble seed value from the present cycle scramble seed value; a jumping processing scramble filter which receives the addition result of the operation section and the address information of the data under being transferred, produces a scramble seed value at the destination using the addition result, providing with a case where a

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jumping in which a part of the data under being transferred is failed, to hold the same value, and

outputs a scramble seed value corresponding to the data address at the destination when the

jumping processing has occurred; a first selector which selects the scrambling seed value which

is outputted from the jumping processing scrambling filter when the jumping processing has

occurred, and selects the scramble seed value which is outputted from the scrambling filter

otherwise, to output the selected result; a second selector which selects the scrambling seed value

which is outputted from the scramble seed value table conversion section when the data under

being transferred is a top of a sector and selects the scramble seed value which is outputted from

the first selector otherwise, to output the selected result to the scramble filter; and the data under

being transferred being scrambled using the scramble seed value which is outputted from the

second selector.

5) On page 13, line 19, please amend as follows:

According to the present invention (Claim 6), there is provided a data processing

apparatus for de-scrambling scrambled data which are under being transferred, which comprises:

an ID storing section which stores an ID information relating to a sector which is a scrambling

block unit of data under being transferred, which ID information is set by a central processing

unit; a sector counter section which counts the number of the sectors in the data under being

transferred; an operation section which adds the ID information from the ID storing section and

the sector number information from the sector counter section; a scramble seed value table

conversion section which converts the addition result which is inputted from the operation

section into a scrambling seed value; a scramble filter which, making a period during which data

of a predetermined length is transferred one cycle, produces a next cycle scramble seed value

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from the present cycle scramble seed value; a jumping processing scramble filter which receives the addition result of the operation section and the address information of the data under being transferred, produces a scramble seed value at the destination using the addition result, providing with a case where a jumping in which a part of the data under being transferred is failed, to hold the same value, and outputs a scramble seed value corresponding to the data address at the destination when the jumping processing has occurred; a first selector which selects the scrambling seed value which is outputted from the jumping processing scrambling filter when the jumping processing has occurred, and selects the scramble seed value which is outputted from the scrambling filter otherwise, to output the selected result; a second selector which selects the scrambling seed value which is outputted from the scramble seed value table conversion section when the data under being transferred is a top of a sector, and selects the scramble seed value which is outputted from the first selector otherwise, to output the selected result to the scramble filter; and the scrambled data under being transferred being de-scrambled using the scramble seed value which is outputted from the second selector.

6) On page 15, lines 6-8, please amend as follows:

According to the present invention ~~(Claim 7)~~, there is provided a data processing apparatus ~~as defined in claim 5 or 6, wherein:~~ the scramble filter section which includes at least two scrambling filters, selects a scrambling filter in accordance with the data length of the data to be transferred, to produce a next cycle scrambling seed value from the present cycle scrambling seed value.

7) On page 15, lines 13-15, please amend as follows:

According to the present invention ~~(Claim 8)~~, there is provided a data processing apparatus ~~as defined in claim 5 or 6, wherein:~~ the scramble filter section which includes at least two scrambling filters, selects a scrambling filter in accordance with the jumping destination of the data to be transferred, to produce the scrambling seed value.

8) On page 15, line 20 – page 17, line 4, please amend as follows:

~~According to the present invention (Claim 1), since a data processing apparatus for scrambling data which are under being transferred comprises an ID storing section which stores an ID information relating to a sector which is a scrambling block unit of data under being transferred, which ID information is set by a central processing unit, a sector counter section which counts the number of the sectors in the data under being transferred, an operation section which adds the ID information from the ID storing section and the sector number information from the sector counter section, and the data under being transferred being scrambled using the addition result which is outputted from the operation section, a scrambling processing having a high reliability in a disc interface section in a DVD system can be carried out using, not the ID information included in the data under being transferred, but a secured information which is set by a central processing unit.~~

~~According to the present invention (Claim 2), since a data processing apparatus for de-scrambling data which are under being transferred, comprises an ID storing section which stores an ID information relating to a sector which is a scrambling block unit of data under being transferred, which ID information is set by a central processing unit, a sector counter section which counts the number of the sectors in the data under being transferred, an operation section which adds the ID information from the ID storing section and the sector number information~~

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~~from the sector counter section, and the scrambled data under being transferred is de-scrambled~~
~~using the addition result which is outputted from the operation section, a scrambling processing~~
~~having a high reliability in a disc interface section in a DVD system can be carried out using, not~~
~~the ID information included in the data under being transferred, but a secured information which~~
~~is set by a central processing unit.~~

9) On page 17, lines 5-7 and 10, and page 18, line 2, please amend as follows:

According to the present invention ~~(Claim 3)~~, since ~~the~~ a data processing apparatus ~~defined in~~ ~~claim 1 or 2, further~~ for scrambling data which are under being transferred or de-scrambling scrambled data which are under being transferred, comprises an ID storing section which stores an ID information relating to a sector which is a scrambling block unit of data under being transferred, which ID information is set by a central processing unit, a sector counter section which counts the number of the sectors in the data under being transferred, an operation section which adds the ID information from the ID storing section and the sector number information from the sector counter section, a scramble seed value table conversion section which converts the addition result which is inputted from the operation section into a scrambling seed value, a scramble filter of at least one byte which, making a period during which data of a predetermined length is transferred one cycle, produces a next cycle scramble seed value from the present cycle scramble seed value, a selector which selects a scramble seed value which is outputted from the scramble seed table conversion section when the data to be transferred is data at a top of a sector, and selects the scramble seed value which is outputted from the scramble filter section otherwise, to output the selected result to the scramble filter, and the data under being transferred is scrambled or the scrambled data under being transferred is de-scrambled using the scramble seed

value which is outputted from the selector, a scrambling processing having a high reliability or a de-scrambling processing in a disc interface section in a DVD system can be carried out, using a correct scramble seed value which is produced by using, not the ID information included in the data under being transferred, but a secured information which is set by a central processing unit. Further, it is possible to perform data transfer of two byte or more during one cycle, thereby enabling the descrambling process in which data to be operated change continuously, at high speeds.

10) On page 18, lines 3 and 4, please amend as follows:

According to the present invention (Claim 4), since in the data processing apparatus defined in claim 3, the scramble filter section which includes at least two scrambling filters, selects a scrambling filter in accordance with the data length of the data to be transferred to produce a next cycle scrambling seed value from the present cycle scrambling seed value, a scramble seed value which correspond to at least two data lengths can be produced.

11) On page 18, line 11, please amend as follows:

According to the present invention (Claim 5), since a data processing apparatus for scrambling data which are under being transferred, comprises an ID storing section which stores an ID information relating to a sector which is a scrambling block unit of data under being transferred, which ID information is set by a central processing unit, a sector counter section which counts the number of the sectors in the data under being transferred, an operation section which adds the ID information from the ID storing section and the sector number information from the sector counter section, a scramble seed value table conversion section which converts the addition result which is inputted from the operation section into a scrambling seed value; a

scramble filter which, making a period during which data of a predetermined length is transferred one cycle, produces a next cycle scramble seed value from the present cycle scramble seed value, a jumping processing scramble filter which receives the addition result of the operation section and the address information of the data under being transferred, produces a scramble seed value at the destination using the addition result, providing with a case where a jumping in which a part of the data under being transferred is failed, to hold the same value, and outputs a scramble seed value corresponding to the data address at the destination when the jumping processing has occurred; a first selector which selects the scrambling seed value which is outputted from the jumping processing scrambling filter when the jumping processing has occurred, and selects the scramble seed value which is outputted from the scrambling filter otherwise, to output the selected result; a second selector which selects the scrambling seed value which is outputted from the scramble seed value table conversion section when the data under being transferred is a top of a sector and selects the scramble seed value which is outputted from the first selector otherwise, to output the selected result to the scramble filter; and the data under being transferred being scrambled using the scramble seed value which is outputted from the second selector, even when data failure (data jumping) has occurred during the data being transferred, a scrambling processing having a high reliability in a disc interface section in a DVD system can be carried out continuously.

12) On page 20, line 1, please amend as follows:

According to the present invention (Claim 6), since a data processing apparatus for de-scrambling scrambled data which are under being transferred, which comprises: an ID storing section which stores an ID information relating to a sector which is a scrambling block unit of

data under being transferred, which ID information is set by a central processing unit; a sector counter section which counts the number of the sectors in the data under being transferred; an operation section which adds the ID information from the ID storing section and the sector number information from the sector counter section; a scramble seed value table conversion section which converts the addition result which is inputted from the operation section into a scrambling seed value; a scramble filter which, making a period during which data of a predetermined length is transferred one cycle, produces a next cycle scramble seed value from the present cycle scramble seed value; a jumping processing scramble filter which receives the addition result of the operation section and the address information of the data under being transferred, produces a scramble seed value at the destination using the addition result, providing with a case where a jumping in which a part of the data under being transferred is failed, to hold the same value, and outputs a scramble seed value corresponding to the data address at the destination when the jumping processing has occurred; a first selector which selects the scrambling seed value which is outputted from the jumping processing scrambling filter when the jumping processing has occurred, and selects the scramble seed value which is outputted from the scrambling filter otherwise, to output the selected result; a second selector which selects the scrambling seed value which is outputted from the scramble seed value table conversion section when the data under being transferred is a top of a sector, and selects the scramble seed value which is outputted from the first selector otherwise, to output the selected result to the scramble filter; and the scrambled data under being transferred being de-scrambled using the scramble seed value which is outputted from the second selector, even when data failure (data

jumping) has occurred during the data being transferred, a de-scrambling processing having a high reliability in a disc interface section in a DVD system can be carried out continuously.

13) On page 21, lines 16 and 17, please amend as follows:

According to the present invention (Claim 7), since in the data processing apparatus defined in claim 5 or 6, the scramble filter section which includes at least two scrambling filters, selects a scrambling filter in accordance with the data length of the data to be transferred, to produce a next cycle scrambling seed value from the present cycle scrambling seed value, it is possible to produce a scramble seed value which corresponds to at least two kinds of data lengths.

14) On page 21, lines 24 and 25, please amend as follows:

According to the present invention (Claim 8), since in the data processing apparatus defined in claim 5 or 6, the scramble filter section which includes at least two scrambling filters, selects a scrambling filter in accordance with the jumping destination of the data to be transferred, to produce the scrambling seed value, even when frame jumping processing has occurred at an odd frame or an even frame in the data under being transferred, a correct scrambling seed value can be produced from the top of the frame at the jumping destination.